REMARKS

Applicants have carefully considered the positions of the Examiner and respectfully request reconsideration based upon the manifest differences between the claimed invention and the cited references. Initially, applicants thank the Examiner for pointing out the lack of antecedent basis in claim 12 and have amended the claim accordingly. Applicants have also amended claim 4 to correct a typographical error. Claims 4-9, 11-12 and 16-28 are presented herein for examination.

I. THE INVENTION

The present invention discloses an intelligent, modular server management system for enabling selective access, control and operation of a plurality of remotely located computers from one or more user workstations. Access is completely independent of the associated computer network. The present invention includes a computer interface module ("CIM") coupled to each remote computer, a matrix switch unit and one or more user stations with a connected keyboard, video display and cursor control device. Further, the matrix switch unit is coupled to each CIM and user station via a first and second connection, respectively. Each CIM is preferably powered by the attached remote computer.

The present invention discloses the bi-directional transmission of keyboard and mouse signals between a local user station and one of the plurality of remotely located computers and the unidirectional transmission of video signals from the remote computer to the local user station. Each user station multiplexes signals output from the keyboard and cursor control device and provides an interface to the video display. In addition, the present invention allows several users simultaneous access, control and operation of the plurality of remote computers.

Initially, a user at the user station requests connection to a remotely located computer through a user-friendly on-screen interface display. Through this display, the user may easily select and switch among the plurality of remote computers. Upon acceptance of the request from the selected remote computer, the user station packetizes keyboard and/or cursor control device signals and transmits the packetized signals as a data packet (preferably consisting of five (5) bytes) to the matrix switch unit along a single twisted pair of a Category 5 UTP cable. Generally, command data, which comprises identification information of a remote computer, is transmitted on the first byte with length data. Significantly, one byte carries half command and half length data, which advantageously shortens the data packet and thus increases the system's efficiency. The switch unit interprets the command data, emulates the keyboard and/or cursor control device signals and sends the emulated signals to the selected remotely located computer.

Simultaneously, video signals are transmitted from the remotely located computer through the CIM to the matrix switch unit, which subsequently routes the video signals to the appropriate local user station. Horizontal and vertical synchronization signals are preferably encoded and transmitted separately with one of the components of the video signals (i.e., horizontal sync signals with green and vertical sync signals with blue). The present invention uses the encoded synchronization signals to enable automatic tuning of the video signals. That is, the present invention discloses circuitry located at the user station to automatically amplify the amplitude and frequency components of the video signals and analyze the synchronization signals to determine the proper level of amplification necessary. The amplification of the frequency is determined based upon the shape of the synchronization signal. In this manner, the present invention enables efficient transmission of video signals from the remote computer to the user station thereby allowing a user at the user station to efficiently access, control and operate

the remote computer.

II. THE EXAMINER'S REJECTIONS

In the Office Action dated January 26, 2006, the Examiner rejected claims 4-9, 12, 16-17, and 19-28 under 35 U.S.C. § 103(a) as being unpatentable over Dickens *et al.* U.S. Patent No. 6,618,774 ("Dickens"), in view of Beasley *et al.* U.S. Patent No. 5,937,176 ("Beasley").

In the opinion of the Examiner:

> "as per claim 4, Dickens discloses the invention substantially as claimed including a computer switching system comprising: a user interface for multiplexing signals output from a connected keyboard and cursor control device and for providing an interface to a video display [101, Figure 1; and col 15, lines 34-45]; switch unit coupled to said user interface device by a single first connection [100, Figure 1; and col 15, lines 7-10]; wherein video signals output from said remotely located computers are transmitted to said video display via said switch unit [104, Figure 1; and col 15, lines 34-37]; wherein said user interface device comprises an amplification circuit for automatically amplifying said transmitted video signals based on at least a synchronization signal transmitted with a component of said video signals [i.e. gain amplifiers] [303, 304, Figure 3; and col 18, lines 34-67]."

The Examiner admits that:

> "Dickens does not specifically disclose a switch unit between said user interface and a plurality of remote computers; and a plurality of computer interface modules each coupled to said switch unit by a single second connection, each of said computer interface modules couples to at least one of said remotely located computers; wherein said user interface receives keyboard and cursor control device signals, packetizes at least one of said keyboard or cursor control signals and transmits said packetized signal with command data to said switch unit; and wherein said switch unit interprets said command data which identifies at least one of said remotely located computers, generates an emulated keyboard or cursor control device signal based on said packetized signal and transmits said emulated signal to said identified remotely located computer."

However, according to the Examiner, Beasley discloses:

> "a switch unit for enabling communication between said user interface device and a plurality of remotely located computers [60, Figure 1; Abstract; and col 3, lines 1-18], and a plurality of computer interface modules each computer to said switch unit by a single second connection [152A-D, Figure 4; and col 6, lines 15-27], each of said computer interface modules couples to at least one of said remotely located computers [52-56; Figure 1; and col 3, lines 1-29]; wherein said user interface device receives keyboard and cursor control device signals [70, Figure 1; and col. 3, lines 38-49], packetizes at least one of said keyboard or cursor control signals and transmits said packetized signal with command data to said switch unit [Figures 2A; Abstract; and col 3, lines 49-col 4, lines 10]; and wherein said switch unit interprets said command data which identifies at least one of said remotely located computers [Figure 2B; col 4, lines 63-col 5, lines 12; and col 6, lines 47-58] generates an emulated keyboard or cursor control device signal based on said packetized signal and transmits said emulated signal to said identified remotely located computer [col 1, lines 60-65; and col 5, lines 27-56]."

Further, the Examiner opines that it would have been obvious to one of skill in the art to combine the teachings of Dickens and Beasley "because Beasley's teaching of plurality of remotely located computers would allow to provide the ability for system administrators to control multiple computers remotely so that maintenance time can be reduced and increase productivity."

Similarly, the Examiner rejected dependent claims 5-9, 12 and 16 in view of Dickens.

Next, the Examiner rejected independent claim 17 for "similar reasons as stated above in claims 1 [SIC: 4], 12-16 [SIC: 12, 16]." In the opinion of the Examiner, "Dickens discloses wherein one of said computer interface modules receives video having red, green, and blue components from one of said remote computers [col 9, lines 19-37] and encodes synchronization signals onto at least one of said components for transmission to said user station through said switch [col 26, lines 3-7]."

The Examiner then also rejected dependent claims 19-24 in view of Dickens.

The Examiner rejected independent claim 25 "for similar reasons as stated above in claim 1 [SIC: 4] and 17." In the opinion of the Examiner, Dickens discloses "amplifying at least one frequency component of said video signals to produce video tuned signals for display at said user station [col 10, lines 24-27]."

The Examiner also rejected dependent claims 27 and 28 "for similar reasons as stated above in claims 13, 14 and 16."

Finally, the Examiner rejected claims 11 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Dickens in view of Beasley, and further in view of Wilder *et al.* U.S. Patent No. 6,557,170 ("Wilder"). In the opinion of the Examiner,

> "[a]s per claim 11, Dickens and Beasley do not specifically disclose wherein each of said plurality of computer interface modules receives power from one of said remote computers. Wilder discloses wherein each of said plurality of computer interface modules receives power from one of said remote computers [Figure 3; Abstract; and col 3, lines 51-col 4, lines 12]. It would have been obvious to combine the teachings of Dickens, Beasley and Wilder because Wilder' teaching of power control would allow to easy manage and control the power source of the devices. As per claim 18, it is rejected for similar reasons as stated above in claim 11."

III. THE EXAMINER'S REJECTIONS SHOULD BE RECONSIDERED AND WITHDRAWN

Applicants herein respond to the Examiner's rejections and highlight the differences between claims 4-9, 11-12 and 16-28 and the cited references such that it should become apparent to the Examiner that these rejections should be withdrawn.

Initially, the Examiner rejected claims 4-9, 12, 16-17, and 19-28 under 35 U.S.C. § 103(a) as being unpatentable over Dickens in view of Beasley. In rejecting claims 4-9, 12, 16-17, and 19-28, the Examiner opines that "[i]t would have been obvious to one of skill in the art at the time of the invention was made to combine the teachings of Dickens and Beasley because

Beasley's teachings of plurality of remotely located computers would allow to provide the ability for system administrators to control multiple computers remotely so that maintenance time can be reduced and increase productivity." Applicants respectfully disagree. Applicants further submit that even if the combination of Dickens and Beasley were proper, such combination does not teach the present invention as claimed.

Briefly, Dickens discloses a computer signal transmission system for transmitting video and audio signals via a twisted pair cable. The system taught by Dickens includes a computer interface and peripheral interface connected by the twisted pair cable and teaches enabling a single user remote access to a single set of peripherals. Dickens further teaches the transmission of horizontal and vertical synchronization signals with video signals along three (3) twisted pairs of wires – a technique well known in the art for minimizing cabling. (*See*, e.g., Dickens, col. 2, lines 1-18). Dickens discloses a technique for compensating for signal degradation by utilizing a combination of user input manual settings and automatic compensation circuitry. (*See*, e.g., Dickens, col. 10, lines 1-37). Such a technique is disclosed as a resistance measurement compensation technique, which measures the resistance between a pair of wires at one end of the cable that are terminated at the other end by a known resistance. Specifically, the resistance measurement is achieved by applying a known voltage and measuring the current flow. (*See*, e.g., Dickens, col. 10, lines 41-52). Utilization of such a technique provides results which must be further compensated by manual tuning.

Beasley discloses "a computerized switching system that allows centrally located network administrators to operate multiple server computers over long distances without requiring a complicated wiring scheme. In general, the switching system allows data transmission between a workstation and a remotely located server computer. A signal conditioning unit receives

keyboard and mouse signals from a workstation and generates a serial data packet which is transmitted to a central crosspoint switch. The crosspoint switch routes the keyboard/mouse packet to another signal conditioning unit that is coupled to the remotely located server computer. The signal conditioning unit coupled to the server computer decodes the keyboard/mouse packet and applies the signals to a keyboard and mouse connector on the remote computer in the same manner as if the mouse and keyboard were directly coupled to the remote computer." (Beasley, col. 1, lines 49-65).

In the opinion of the Examiner, Beasley discloses, among other things, "wherein said switch unit interprets said command data which identifies at least one of said remotely located computers [Figure 2B; col. 4, lines 63-col 5, lines 12; and col 6, lines 47-58], [and] generates an emulated keyboard or cursor control device signal based on said packetized signal and transmits said emulated signal to said identified remotely located computer [col 1, lines 60-65; and col 5, lines 27-56]." Applicants respectfully disagree. Applicants note that Beasley, col. 1, lines 60-65 states: "[t]he signal conditioning unit coupled to the server computer decodes the keyboard/mouse packet and applies the signals to a keyboard and mouse connector on the remote computer in the same manner as if the mouse and keyboard were directly coupled to the remote computer." Notably, the signal conditioning unit is separate and distinct from the central crosspoint switch, which the Examiner identified as the user interface device and switch unit, respectively. (*See* Office Action, p. 5). (*See also*, e.g., Beasley, Figure 1, showing signal conditioning unit (pod) 70 and central crosspoint switch 60).

The other citation (i.e., Beasley, col. 5, lines 27-56) also fails to disclose a switch unit that generates an emulated keyboard or cursor control device signal based on a packetized signal and transmits the emulated signal to a remotely located computer. Rather, the citation discusses pod

76, which again is separate and distinct from the central crosspoint switch 60. (*See*, e.g., Beasley, Figure 1, showing pod 76 and central crosspoint switch 60).

Regardless, nowhere does Beasley disclose a switch unit that emulates keyboard or cursor control device signals. Instead, Beasley discloses a central crosspoint switch (60) that merely routes the same keyboard and mouse signals received from one pod (e.g., 70) to another pod (e.g., 76). In this direction, pod 76 then sends the keyboard and mouse signals to a remote computer. (*See*, e.g., Beasley, Figure 4, and col. 6, lines 15-62). For example, "[p]od to pod packets are routed from an input card through the switch card to an output card and vice versa on a digital backplane." (Beasley, col. 6, lines 28-30). (*See also,* Beasley, col. 1, lines 57-60 stating: "[t]he crosspoint switch routes the keyboard/mouse packet to another signal conditioning unit that is coupled to the remotely located server computer"). That is, the packets containing keyboard and mouse signals are merely routed (not emulated) through the central crosspoint switch and the same keyboard and mouse signals received from one pod are sent to another pod.

In contradistinction, the present invention discloses a system and method wherein the user station packetizes the keyboard and/or cursor control device signals and transmits them in a data packet with command data. The switch unit receives the packetized data, interprets the data packet, generates emulated keyboard and cursor control device signals and transmits the emulated signals to one of the plurality of remotely located computers depending on the command data received from the user station. Such a design enables, among other things, an increase in distance between the local user stations and the remote computers, better and more efficient signal transmission and a reduction in cost. The present invention discloses that signals generated either at the user interface location or by the remote computer are transmitted to the central processing unit or microcontroller, which reads the received signals and propagates a

new, emulated signal to the intended destination. This emulated signal is stronger and therefore able to traverse a greater distance while being less susceptible to loss or distortion. Additionally, by centralizing much of the process, more local user stations and remote computers may be added at a minimal cost increase. This is not taught or disclosed by Dickens or Beasley.

The Examiner also rejected dependent claims 11 and 18 in view of the combination of Dickens, Beasley and Wilder "because Wilder' teaching of power control would allow to easy manage and control the power source of devices." Applicants respectfully note that Wilder discloses allowing "a user of the KVM switch to selectively control electrical power to the computers," (Wilder, Abstract). That is, a user can control the power to a computer, i.e., turn the computer's power off and on. In contrast, the present invention as claimed discloses that each of the plurality of computer interface modules receives power from one of the remote computers. Significantly, such a design eliminates the necessity for extra power cabling for each of the computer interface modules. This is not taught or disclosed by Wilder.

In view of the foregoing, applicants submit the Examiner's rejection of claims 4-9, 11-12, and 16-28 should be reconsidered and withdrawn. Furthermore, even if proper, combining Dickens with Beasley and/or Wilder does not teach or suggest applicants' novel invention. That is, Dickens fails to teach a system and method for enabling a plurality of users to simultaneously access, operate and control a plurality of remotely located computers. Both Dickens and Beasley fail to teach a system that includes a switch unit for receiving keyboard and cursor control device signals, and propagating a new, emulated signal to the intended destination based upon command data transmitted with the signals. Wilder fails to teach that the remote computers may provide power to the computer interface modules. Therefore, upon closer review of the cited references, in view of the amendments and remarks made herein above, applicants submit that it will be

apparent to the Examiner that his rejection should be reconsidered and withdrawn.

Further, applicants respectfully point out that, standing on their own, the cited references provide no justification for the combination asserted by the Examiner. "Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so." *ACS Hospital Systems Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984).

The cited references provide no such suggestion or incentive for the combination suggested by the Examiner. Therefore, the obviousness rejection could only be the result of a hindsight view with the benefit of the applicant's specification. However,

> "To draw on hindsight knowledge of the patented invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own reconstruction -- an illogical and inappropriate process by which to determine patentability. The invention must be viewed not after the blueprint has been drawn by the inventor, but as it would have been perceived in the state of the art that existed at the time the invention was made."

(citations omitted) *Sesonics v. Aerosonic Corp.*, 38 U.S.P.Q. 2d. 1551, 1554 (1996).

In addition, the combination advanced by the Examiner is not legally proper – on reconsideration the Examiner will undoubtedly recognize that such a position is merely an "obvious to try" argument. Dickens and Beasley are unsuitable for efficiently and effectively enabling multiple users to simultaneously select, access, operate and control a plurality of remotely located computers, wherein the switch unit receives packetized data, interprets the data packet, generates emulated keyboard and cursor control device signals and transmits the emulated signals to one of the plurality of remotely located computers depending on the

command data received from the user station as taught and claimed for the present invention. Nothing in Dickens, Beasley or Wilder reveal any functional or design choices that could possibly include all of applicants' invention. Accordingly, the present invention is not obvious and unpatentable over Dickens in view of Beasley and/or Wilder. At best it might be obvious to try such a combination. Of course, "obvious to try" is not the standard for obviousness under 35 U.S.C. §103. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 231 U.S.P.Q. 81, 91 (Fed. Cir. 1986).

Under the circumstances, applicants respectfully submit that the Examiner has succumbed to the "strong temptation to rely on hindsight." *Orthpedic Equipment Co. v. United States*, 702 F.2d 1005, 1012, 217 USPQ 193, 199 (Fed.Cir. 1983):

> "It is wrong to use the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claim in suit. Monday morning quarterbacking is quite improper when resolving the question of nonobviousness in a court of law." *Id.*

Applicants submit that the only "motivation" for the Examiner's combination of Dickens, Beasley and/or Wilder is provided by the teachings of applicants' own disclosure. No such motivation is provided by the references themselves.

Therefore, as is evidenced by the above amendments and remarks, the present invention, for the first time, discloses a system and method for intelligent modular remote computer management whereby a plurality of users can simultaneously access, operate and control a plurality of remote computers, wherein the switch unit receives packetized data, interprets the data packet, generates emulated keyboard and cursor control device signals and transmits the emulated signals to one of the plurality of remotely located computers depending on the command data received from the user station. A system and method such as this is neither taught

nor suggested anywhere in the prior art, including Dickens, Beasley and Wilder.

CONCLUSION

In view of the foregoing, applicants respectfully submit that the present invention as claimed in claims 4-9, 11-12 and 16-28 is neither taught nor rendered obvious in view of the cited references and represents a patentable contribution to the art. Applicants submit that the application is now in condition for allowance, and early and favorable action is accordingly solicited.

Respectfully submitted,

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David M. Hill
Reg. No. 46,170
WARD & OLIVO
708 Third Avenue
New York, New York 10017
(212) 697-6262